

Techtalk: Wikis and Collaborative Knowledge Construction

By David C. Caverly and Anne Ward

In the last column, we began discussing Web 2.0 applications. In this column, we'll review participatory, social networking software called "wikis." We'll define wikis, discuss their use in college classrooms, explore benefits provided for collaborative knowledge construction, and explain five types of wikis with applications to developmental education (DE).

What is a Wiki?

Wikis are a variety of dynamic Web pages that can be edited using Web browsers (Wikipedia Foundation Inc. [WFI], 2008a). Although the best example of a wiki is *Wikipedia*, others include *MySpace* or *YouTube* discussed in our last column. Wikis allow a group to collaboratively construct a document online by subscribing and then editing multimedia using simple text editors. Tags, RSS (Real Simple Syndication), feeds, and full-page editing are often available. If unwanted changes occur, a moderator can easily launch a previous version from a catalog. For more information, view *Wikis in Plain English* (LeFever & LeFever, 2007).

Examples of Wikis

Wikis have been used in a variety of college assignments, and examples are generally accessible after joining a wiki site and searching for "educational applications." For example, a quick search on the topic "wikis in college" in *WikiSpaces* (2008) at the time of this writing found 87 education wikis. Applications of DE wikis can be found at the *Online Teaching and Learning Wiki* site created by Julie Hutchin's project for TIDE in 2006 (Hutchin, 2008) or the *Developmental Education Wiki* site created by Caverly (2008).

Researchers have consistently documented the value of publishing students' collaborative writing in terms of increased motivation, positive attitudes, and greater achievement (Ajjan & Hartshorne, 2008). Newer research is suggesting writing using Web 2.0 technology changes how students construct meaning (Writing in Digital Environments [WIDE] Research Center, 2008).

Coconstructing Meaning with a Wiki

A wiki blurs the line between the reader and the writer. Both are encouraged to coconstruct knowledge through reading and editing text (in the broad sense of print, graphic, audio, and video), adding tags to classify meaning, and participating in a learning community where the group coconstructs knowledge and takes ownership of a message (Cummings, 2008). Wikis thus provide a social constructivist, epistemological stance (Vygotsky, 1978) allowing knowledge to be collaboratively constructed among students (Resta & Laferridère, 2007). Truth is relativistic, variable, and determined by the group (Garfinkel, 2008). Through the "wisdom of the crowd" (Liotta, 2008) and students discussing, writing, and sharing combined knowledge and perceptions of reality, an understanding (i.e., truth) is determined.

Wikipedia (WFI, 2008b) builds upon this phenomenon in their cre-

ation of an online, wiki-based encyclopedia. It seemingly is the first source students seek out for new information. Still, *Wikipedia* does not purport to present the "truth" about what is known about a given topic as documented by experts. Rather, it presents what the "crowd" thinks is the truth, using a different epistemological set of standards including three policy thresholds for inclusion into its wiki (WFI, 2008c): (a) "verifiability policy," where justification that the information is published is the criteria for acceptance, not experts' evidence; (b) "no original research policy," where no original thought is accepted; and (c) "neutral point of view policy," where all points of view are presented regardless of validity. These epistemological standards are counter to expectations of a postsecondary education.

Recent research has compared *Wikipedia* to more traditional sources. Chesney (2006) compared 55 academics reading either *Encyclopaedia Britannica* entries or *Wikipedia* entries and found generally no difference in their credibility, suggesting the accuracy of *Wikipedia* was high. However, Rector (2008) compared nine *Wikipedia* entries to *Encyclopaedia Britannica*, *The Dictionary of American History*, and *American National Biography Online*. She found inaccuracies in eight of the nine entries, and overall *Wikipedia* was 80% accurate compared to 95-96% accuracy in the other sources.

Perhaps the most damning criticism of wikis like *Wikipedia* is Stephen Colbert's (2006) "truthiness" measure. For a satiric effect, Colbert had his viewers create misinformation on a *Wikipedia* site to intentionally point out its vulnerability. He concluded that postings to *Wikipedia* can present a version of reality dependent on those who post and the naiveté of the moderators, which he called "wikiality." That is, truth is created by a constructed reality any group can posit, and credibility is given after it is posted online.

No wonder faculty have concerns about students citing *Wikipedia* (Murley, 2008). DE students need to recognize that *Wikipedia* is no more than an encyclopedia, which is not adequate for college-level work. Still, providing opportunities for students to coconstruct an understanding on a wiki and publish it for others to view generates a powerful teachable moment. Critiquing the validity and reliability of sources, evidence, and arguments shared on a wiki add a sense of immediacy to how knowledge is constructed.

Instructional Applications of Wikis

Phillipson (2008) placed wikis into five "stages of inquiry." A *resource wiki* is a knowledge form (like *Wikipedia*) created through collective constructivism. Resource wikis can grow over several semesters or from several classes or campuses promoting the DE classroom as a "knowledge building community." For example, students (or faculty) could keep an ongoing record of what they are learning (or teaching) in a DE class, documenting their combined knowledge of concepts, coconstructed definitions, examples, and applications (cf., Caverly, 2008).

Presentation wikis are a communication form for drafts of documents to share with a group in order to improve an individual's project and one's ability to communicate that work. Unlike a resource wiki, it is inwardly focused on the construction of an individual project. DE students might construct a wiki regarding their understanding of a better reading strategy for a history class, steps to write a descriptive essay, or developing a process to help organize one's time.

Gateway wikis are data sharing forms to engender a communal discussion of different ways to make meaning from a set of data. Students proffer explanations of the data, justifying decisions with evidence and dialog as a means of solving a problem. DE students might generate various solutions for studying a history chapter, defending each solution with respect to class notes, previous exams, and their majors, and then document their

solutions in the form of a Webquest (Peterson, Caverly, & MacDonald, 2003).

Simulation wikis are an exploration venue where a simulated environment is provided. Here, the coconstruction of knowledge creates a real-life situation that unfolds as contributors offer contextualized and alternative solutions following multiple paths, each with a variety of decision points to justify them. DE students might be provided different fraction multiplication problems connected with an engineering task along with various ballpark solutions. They collaboratively create a scenario constructing various paths through this assignment, and decision paths are identified as they decide the best solution.

Illuminated wikis are an explication of a text form: A text is divided and each person in a group documents with coconstructed steps how to understand and convert to knowledge their individual part. DE students might be given a descriptive essay assignment which consists of a final draft of a quality descriptive essay. Students divide up the paper and co-constructively illuminate it using print, graphic, audio, and video hyperlinks to help another writer understand how this essay was created.

Conclusion

Wikis provide an opportunity for DE students to collaboratively learn in an asynchronous environment. Affording a common task to solve, learning from peers' attempts at evidence-based solutions, and publishing the results for others to see, wikis can be a powerful instructional intervention for DE students and faculty. Accept the ephemeral nature of student-based collaborative learning with its coconstruction of knowledge, explore wikis in unique instructional environments, and share findings in the *Online Teaching and Learning Wiki* or the *Developmental Education Wiki* so we all can grow professionally.

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